

Claims:

1. (Currently Amended) A method, comprising:

in a workflow system and as part of a workflow in the workflow system:

generating an electronic document in a workflow system for use with an external entity that does not exchange electronic documents with the workflow system, the electronic document having text content, the electronic document further having a human-readable document appearance representing the text content;

attaching one or more approval codes to the electronic document, such that when the document is printed, each approval code generates an approval mark;

converting the text content in an unambiguous reading order into a canonical form;

generating control codes for the electronic document as part of a workflow in the workflow system, the control codes including one or more first control codes that each correspond to a respective approval code and one or more second control codes generated from the canonical form of the text content; and

creating a print out, the print out including a full-sized version of the document appearance, the respective approval mark corresponding to each approval code, the one or more first control codes, and the one or more second control codes, the one or more first control codes being usable to authenticate the one or more respective approval marks, and the one or more second control codes being usable to validate the text content of the print out; and then

sending the print out to the external entity.

2. (Canceled)

3. (Previously Presented) The method of claim 1, wherein generating the approval mark comprises:

generating a digital signature as the approval code; and

generating a signature image associated with the approval code.

4. (Previously Presented) The method of claim 1, wherein generating one or more second control codes comprises:

generating a single second control code for the all of the text content.

5. (Previously Presented) The method of claim 1, wherein the print out has two or more physical pages and generating the one or more second control codes comprises:

generating one or more second control codes, each second control code corresponding to the text content on a page of the one or more physical pages.

6. (Previously Presented) The method of claim 1, wherein generating the one or more second control codes comprises:

encrypting the canonical form with a private key, the private key having an associated public key certificate for retrieving a public key associated with the private key.

7. (Previously Presented) The method of claim 1, further comprising:
receiving the print out at the workflow system from the external entity, the print out having a subsequently added human signature;

validating the received print out within the workflow system; and then
continuing the workflow in the workflow system.

8. (Currently Amended) A computer program product, tangibly embodied in a machine-readable storage device, comprising instructions operable to cause a programmable processor to:

receive a print out of an electronic document having text content generated in a workflow system, the print out being received in an external entity that does not exchange electronic documents with the workflow system, the print out having a human-readable document appearance representing the text content, control codes and one or more approval codes, the control codes including one or more first control codes each generated for a respective approval code and one or more second control codes generated from a canonical form of the text content, the print out further representing a full-size version of the human-readable document appearance;

generate approval marks using the respective approval codes, the one or more first control codes generated for each approval code being usable to authenticate the approval marks generated by the approval code;

convert the text content of the human-readable appearance of the print out to the canonical form of the text content; and

access a portal of the workflow system to authenticate the approval marks and to validate the print out using the canonical form and the first and second control codes.

9. (Canceled)

10. (Currently Amended) A workflow system comprising:

means for generating an electronic document in a workflow system as part of a workflow, the electronic document being for use with an external entity that does not exchange documents with the workflow system, the electronic document having a text content and a human-readable document appearance representing the text content;

means for attaching one or more approval codes to the electronic document, such that when the document is printed, each approval code generates an approval mark;

means for converting the text content in an unambiguous reading order into a canonical form;

means for generating control codes, the control codes including one or more first control codes that each correspond to a respective approval code and one or more second control codes generated from the canonical form of the text content;

means for printing a print out to be sent to the external entity as part of the workflow, the print out including a full-sized version of the document appearance, the respective approval mark corresponding to each approval code, the one or more first control codes, and the one or more second control codes, the one or more first control codes being usable to authenticate the one or more respective approval marks, and the one or more second control codes being usable to validate the canonical form of the text content of the print out;

a portal for validating the print out and authenticating each approval mark, the validation being performed using the canonical form generated from the print out and using the first and second control codes; and

means for continuing the workflow in the workflow system after the print out has been approved by the external entity.

11. (Currently Amended) A computer program product, tangibly embodied in a machine-readable storage device, comprising instructions operable to cause a programmable processor to:

generate an electronic document in a workflow system as part of a workflow, the electronic document being for use with an external entity that does not exchange documents with the workflow system, the electronic document having text content, the electronic document further having a human-readable document appearance representing the text content;

attach one or more approval codes to the electronic document, such that when the document is printed, each approval code generates an approval mark;

convert the text content in an unambiguous reading order into a canonical form;

generate control codes for the electronic document as part of a workflow in the workflow system, the control codes including one or more first control codes each corresponding to a respective approval code and one or more second control codes generated from the canonical form of the text content;

create a print out to be sent to the external entity as part of the workflow, the print out including a full-sized version of the document appearance, the respective approval mark corresponding to each approval code, the one or more first control codes, and the one or more second control codes, the one or more first control codes being usable to authenticate the one or more respective approval marks, and the one or more second control codes being usable to validate the canonical form of the text content of the print out.

12. (Canceled)

13. (Previously Presented) The computer program product of claim 11, wherein the instructions to generate the approval code cause the data processing equipment to:

generate a digital signature as the approval code; and

generate a signature image associated with the approval code.

14. (Previously Presented) The computer program product of claim 11, wherein the instructions to generate the one or more second control codes cause the data processing equipment to:

generate a single second control code for all of the text content.

15. (Previously Presented) The computer program product of claim 11, wherein the print out has two or more physical pages, and the instructions to generate the one or more second control codes cause the data processing equipment to:

generate one or more second control codes, each second control code corresponding to the text content on a page of the one or more physical pages.

16. (Previously Presented) The computer program product of claim 11, wherein the instructions to generate the one or more control codes cause the data processing equipment to:

encrypt the canonical form with a private key, the private key having an associated public key certificate for retrieving a public key associated with the private key.

17. (Previously Presented) The computer program product of claim 11, further comprising instructions operable to cause a programmable processor to:

receive the print out at the workflow system, the print out having a subsequently added human signature;

validate the received print out within the workflow system; and then
continue the workflow in the workflow system.